REMARKS

Claims 1-40 were previously pending in the application. Claims 1, 19, and 39 are amended herein. The Applicant hereby requests further examination and reconsideration of the application in view of the foregoing amendments and these remarks.

In the event that the Examiner believes that this amendment does not place the application in condition for allowance, the Applicant requests a telephonic interview between the Examiner and the Applicant's attorney, Ian M. Hughes, to discuss this amendment. The Applicant requests that the Examiner call Mr. Hughes (215-557-6659) to arrange a convenient time for such an interview.

In the Office Action, the Examiner rejected claims 1-40 under 35 U.S.C. § 102(e) as being anticipated by U.S. Patent No.6,418,164 to Endres et al. ("Endres"). In response, Applicant has amended claim 1 to recite:

> "(b) **generating a phase error** for a current sample from the sequence
> **based on a gradient of a blind cost criterion** . . .; (c) **adjusting** at
> least one of the sample period and sample phase **based on the phase**
> **error** . . .; and (d) repeating steps (a), (b), and (c) for subsequent
> samples **so as to substantially recover timing of the symbols in the**
> **received signal** [emphasis added]."

Claim 1 recites repetitively generating, based on a blind (Bussgang-class) cost criterion, a phase error for received samples and adjusting the sample timing (period and/or phase) based on the phase error, allowing for timing recovery of the symbols in a received signal. Support for the amendment may be found throughout Applicant's specification and, in particular, at page 13, lines 7-19. Claims 19 and 39 are similarly amended.

Endres does not describe or suggest timing recovery employing a blind cost criterion. Endres clearly describes an adaptive equalizer in blind equalization systems for compensation of transmission channel distortion and noise. Endres' system employs a blind cost criterion (via constant modulus algorithm (CMA)) to adaptively set Endres' equalizer (i.e., filter) tap weights during processing of the received signal. See Endres, Abstract and col. 6, line 33, to col. 7, line 4. Equalization is different from timing recovery. Equalization is a filtering process that removes noise and signal distortion, such as inter-symbol interference. See Endres, col. 1, lines 50-59. In contrast, timing recovery recovers the timing at which transmitted symbols were generated, allowing for

sampling of received symbols at or near the received symbol signal's peak value. See Applicant's Specification at page 2, line 9, to page 4, line 21. The Examiner points to Endres at FIG. 3 as showing timing recovery through values provided by an error term calculator, but, the Applicant respectfully disagrees. As stated by the Examiner at page 3, lines 7-9, "the error term is fed to the forward equalizer 60" and not to a timing recovery module. Thus, Endres does not recite timing recovery repetitively generating, based on a blind cost criterion, a phase error for received samples and adjusting the sample timing (period and/or phase) based on the phase error, as recited in Applicant's claim 1.

Endres does show timing recovery in a receiver, such as timing recovery module 28 of FIG. 1, but only states that "timing recovery module 28 reproduces the signal time slicing so that it is aligned with the original I and Q signals in the receiver." Endres does not disclose or suggest employing the blind cost criterion (e.g., constant modulus algorithm (CMA)) for the timing recovery module. Endres mentions timing recovery when generating CMA proxy statistics by a computer model, but such timing recovery does not employ CMA proxy statistics. See Endres, col. 7, line 63, to col. 8, line 7.

Thus, Endres does not recite repetitively i) generating, based on a blind cost criterion, a phase error for received samples and ii) adjusting the sample timing (period and/or phase) based on the phase error **so as to substantially recover timing of the symbols in the received signal**, as recited in Applicant's claim 1.

For all these reasons, the Applicant submits that claim 1 is allowable over Endres. For similar reasons, the Applicant submits that claims 19 and 39 are also allowable over Endres. Since claims 2-18, 20-38, and 40 depend variously from claims 19 and 39, it is further submitted that those claims are also allowable over Endres. The Applicant submits therefore that the rejection of the claims under § 102(e) has been overcome.

In view of the above amendments and remarks, the Applicant believes that the pending claims are now in condition for allowance. Therefore, the Applicant believes that the entire application is now in condition for allowance, and early and favorable action is respectfully solicited.
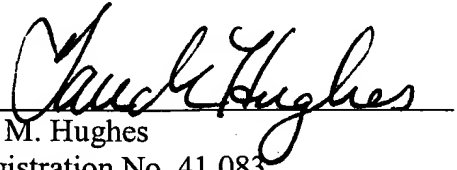
Respectfully submitted,

Date: _September 20, 2004_
Customer No. 22186
Mendelsohn & Associates, P.C.
1515 Market Street, Suite 715
Philadelphia, Pennsylvania 19102

Ian M. Hughes
Registration No. 41,083
(215) 557-6659 (phone)
(215) 557-8477 (fax)